NDT NEWS

FROM THE NDT CENTER OF EXCELLENCE, REDSTONE ARSENAL, AL APRIL 2004

FROM THE NDT CoE TEAM LEAD:

The NDT CoE is proud to announce that we will conduct a NDT Workshop this summer at the Ramada Inn, Madison, AL. This year's Workshop will have a slightly different agenda, with representatives from the various PEO Aviation Weapon System Managers providing short briefings on their programs, along with guest speakers from Safety, Proponency and National Guard Bureau.

We hope that as many soldiers/technicians as possible will be able to attend this years Workshop to share their experiences both in CONUS and abroad regarding operation of NDT equipment and any specific inspection procedures. First hand user input is critical to enable the NDT CoE to improve equipment and processes. See the enclosed registration form and draft agenda in this newsletter for additional details. We hope to see everyone at the Workshop!

The NDT CoE is making progress on the next round of dual pack purchases with tentative delivery schedules beginning in late summer '04.

The NDT CoE would like to pay an onsite visit to ALL AVIM units returning from OIF, OEF and SWA. We want your lessons learned to improve our support! Units that would like a technical assistance visit are encouraged to send an email to Ms. Sandra Ratley to request a visit.

Equipment Info

BNC to Microdot Cables - The NDT CoE conducted a survey regarding the failure rate of the BNC to microdot cables fielded with the new Staveley Dual Packs. Approximately 25% of respondents noted cable failures. Staveley Instruments will warranty the cables; contact the Staveley POC below for assistance:

Staveley Instruments
421 North Quay
Kennewick, WA 99336
Attn: Tracey Quinlan
(509) 736-2751

* Prior to sending in suspect cables, verify a tight microdot connection without destroying the probe washer. With a secure connection hold the probe in one hand and wiggle the cable approximately 1 inch from the microdot connector. Erratic dot movement, generally in a straight line across the LCD indicates a bad cable.

NDT
NEWSLETTER

AH-64 APU Mounts

A fluorescent penetrant inspection of the AH-64 auxiliary power unit (APU) "butt-welded" mounts was mandated by AH64-04-ASAM-01. An alternate eddy current (ET) inspection can be performed to inspect the weld and weld zones. The ET inspection procedure has been submitted for addition to the AH-64 NDI manual TM 1-1520-264-23 and is available on the NDT CoE website.

Figure 2. Cracked mount weld.

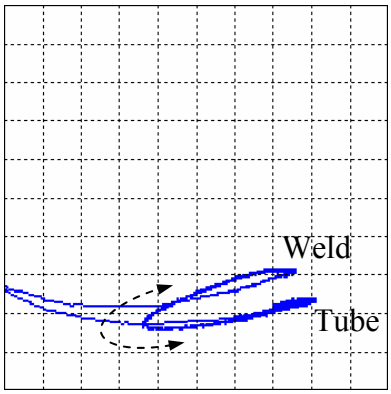


Figure 3. Eddy current instrument display.

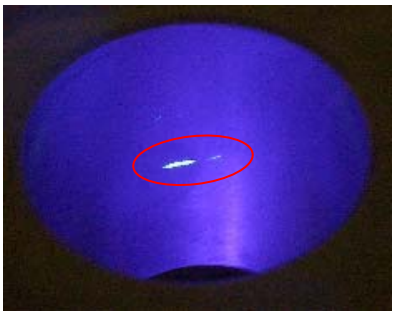
Figure 2 above is a picture of a failed mount weld. Note the crack initiation site is the center of the weld. Figure 3 above is the recurring trace found on the eddy current instrument LCD as the probe is scanned perpendicular to the weld bead. Note the inherent hook pattern as the flying dot transitions from a more conductive material (the tube) across the weld (less conductive) then back to the tube with the flying dot returning to the NULL point.

WEAPON SYSTEM NDT MANUAL REVIEWS

The NDT CoE is in the process of updating all weapon system nondestructive inspection manuals. We encourage everyone who has noted any discrepancies such as wrong component materials, improper inspection method, incomplete inspection coverage, equipment discrepancies etc., to contact the NDT CoE directly.

NDT NEWSLETTER

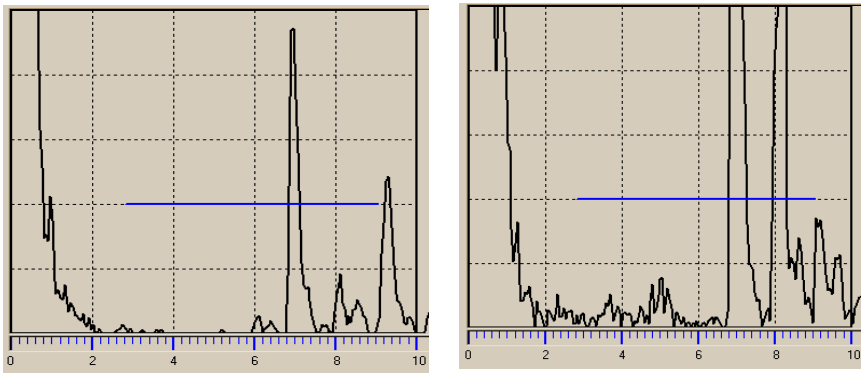
AH-64 Strap Pack QDR Evaluation



Two strap packs from Ft. Hood have recently been rejected due to ultrasonic indications. The bolt in the picture to the right was detected on a routine 125 hr. inspection and exhibited ultrasonic indications on both OD and ID scans.

A Fluorescent Penetrant Inspection (FPI) of the bolt detected a linear indication approximately 0.600” long.

The other strap pack exhibited a 0.250" FPI indication and was also detected ultrasonically on the ID and OD scans. The smaller indication has been shipped to the Boeing Co. metallurgical lab where they are performing additional fatigue cycling to determine the propagation rate and catastrophic failure point.



Maximum UT indications, OD and ID scans respectively

Procedural Info

Many of the new changes to the NDT Technical Manuals will incorporate references to TM 1-1500-335-23 (T.O. 33B-1-1) for process performance/control instructions. Although these instructions are not part of the “procedures”, they are necessary for conducting an optimized process. Look for the revised NDI Methods TM 1-1500-335-23 by fall and revamped NDT manuals by year's end.

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AH-64 Strap Pack Bolt Transducers – The transducer element wear face (black rubberized coating) which protects the transducer element has been showing signs of premature failure due to a suspected inadequate bonding process. An unbonded wear face will exhibit a uneven surface appearance and quite possibly a raised or bubble on the surface. Ultrasonically the faulty wear face will cause the transducer to perform inconsistently with limited repeatability and possible errant (nonrelevant indications) being generated. If your NEC 9030 kit is acting quirky, do not hesitate to send it to NDT Engineering for repair or the NDT CoE for prompt evaluation.

** PERFORM A VISUAL CHECK OF YOUR TRANSDUCERS. WITH A ROUND, BLUNT OBJECT (like the tip of a ink pen cap) CAREFULLY PRESS ON THE WEAR FACE TO DETECT ANY DEFLECTION. IF THE WEAR FACE MOVES SEND TO THE ADDRESS BELOW FOR REPAIR. BE SURE TO INCLUDE A NOTE THAT CLEARLY STATES YOUR UNIT ADDRESS AND A POC.

NDT Engineering Corp.
19620 Russell Rd.
Kent, WA 98032
Attn: Mr. Chuck Blanchard

PENETRANT QUIZ From TM 1-1500-335-23, Change 3

1. Solvent removers and developers are qualified independently and may be used with any qualified penetrant system?

a. True
b. False pg. 2-11

2. All penetrant materials used in performing penetrant inspection shall be listed on the QPL?

a. True
b. False pg. 2-12

3. Penetrant materials shall not be stored in direct sunlight or exceed temperatures above 140º F or below 0º F?

a. True
b. False pg. 2-34

4. The minimum penetrant dwell time for service-induced flaws shall not be less than _____?

a. 5 minutes
b. 15 minutes
c. 30 minutes
d. 60 minutes

pg. 2-45

5. It is good practice to apply fresh penetrant every _____ minutes when extended penetrant dwell times are used.

a. 15 minutes
b. 45 minutes
c. 60 minutes
d. None of the above

pg. 2-46

6. Developer dwell time shall not begin until the part is?

a. Completely covered with developer
b. Completely free of moisture
c. Completely covered with a thick layer of developer

pg. 2-70

7. Developer producing the highest level of sensitivity is:

a. Water suspended developer
b. Water soluble developer
c. Dry developer
d. Nonaqueous developer

pg. 2-70

8. The MAXIMUM dwell time for nonaqueous developer shall not exceed?

a. 30 minutes
b. 1 hour
c. 2 hours
d. None of the above

pg. 2-71

9. Black lights shall not be used for inspection until the required intensity of _____ at 15 inches is achieved.

a. 365 nm
b. 3650 angstroms
c. 1000 $\mu W/cm^2$
d. 100 ft candles

pg. 2-79

10. Black lights that will be used periodically during the day should be allowed to remain on to extend the useful bulb life?

a. True
b. False

pg 2-81

ARMY AVIATION NONDESTRUCTIVE TEST EQUIPMENT

21 – 25 June 2004
RAMADA Inn & Conference Center, Madison, AL

WORKSHOP OVERVIEW

The Product Manager (PM), Aviation Ground Support Equipment (AGSE) will conduct the annual Nondestructive Test Equipment Workshop. The objective of the Workshop is to bring soldiers and technicians from field support units together for a review of current and future equipment needs, NDT issues/problems, and refresher training. During the Workshop we will also conduct the annually required 8-hour radiographer safety refresher. Equipment manufacturers will display the latest nondestructive testing equipment.

Personnel attending the 8 hour radiographer safety training are required to bring their own Thermoluminescent Dosimeter (TLD) and Electronic Personal Dosimeter.

HOTEL ACCOMODATIONS

RAMADA Inn & Conference Center.
8716 Madison Boulevard
Madison, AL 35758
Reservations – (256) 772-0701
Fax – (256) 772-8900

Mention *NDT Workshop* when making your reservations for the reserved block of rooms.

Room Rate: $65.00 + Tax.

GENERAL INFORMATION
Duty Uniform: BDU's

For additional information on the conference, contact:

Conference Chair:
Ms. Sandi Ratley
SFAE-AV-AS-AG
DSN: 897-0199/788-6694
Com: 265-313-0199/ 256-842-6694

sandra.ratley@peoavn.redstone.army.mil
ndt-coe@peoavn.redstone.army.mil

Army Aviation Nondestructive Test Equipment Workshop Registration

Last Name | First Name | Title/Rank

Organization/Company

Address

City | State | Zip Code

Phone

Email

Name on Badge

Fax to: DSN 897-0200, Com (265) 313-0200

Mail to:

PEO Aviation Systems
SFAE-AV-AS-AG (Ms. Sandi Ratley)
Bldg 7770
Redstone Arsenal, AL 35898

We intend on having an after hour softball tournament, bring your glove if you wish to participate

DRAFT AGENDA FOR NDTE WORKSHOP

MON 21st				
0800-1230	**REGISTRATION**			
1300-1330	WELCOME SANDI RATLEY			
1330-1400	AGSE PM LTC LUNN			
1400-1430	GUEST SPEAKER xxxx			
1430-1500	SAFETY			
1500-1515	BREAK			
1515-1530	PROPONENCY			
1530-1630	NGB			

TUES 22nd	ALL ATTENDEES			
0800-0845	OH-58 Ken Muzzo		CORROSION	
			↓	
0845-0930	CH-47 Norm Huston			
			↓	
0930-0945	BREAK			
0945-1030	AH-64 Bob Glover		CORROSION	
			↓	
1030-1115	UH-60 Joe Hoover			
			↓	
1115-1200	MAT'L Kirit Bhansali			
1200-1315	LUNCH			
	TEAM A	**TEAM B**		
1315-1445	ET (SH)	UT (BS)		
1445-1500	BREAK			
1500-1630	UT (BS)	ET (SH)		
1700-2200	HTS SOCIAL (Pool Party)			

(continued)

WED 23rd	TEAM A	TEAM B	RSO	
0800-0945	RT CLASSROOM (RS, EH)	STAVELEY	DAY 1	
0945-1000	BREAK			
1000-1130	RT	MT/PT (BS)		
1130-1300	LUNCH			
1300-1400	RT EXERCISE (RS,BS,EH)	NDT ENG		
1400-1415		BREAK		
1415-1600		VT (SH)		
1700-2000	VENDOR EXHIBITS			

THURS 24th	TEAM A	TEAM B	RSO	
0800-0945	STAVELEY	RT CLASSROOM (RS,EH)	DAY 2	
0945-1000	BREAK			
1000-1130	MT/PT (BS)	RT		
1130-1300	LUNCH			
1300-1400	NDT ENG	RT EXERCISE (RS,BS,EH)	RT EXERCISE	
1400-1415	BREAK			
1415-1600	VT (SH)			
1700-1830	HOTEL SOCIAL			

FRIDAY 24th	TEAM A	TEAM B	RSO	
0800 - 1130	ALL ATTENDEES PRACTICAL EXERCISE			
	LUNCH			
1300 - 1500	ALL ATTENDEES PRACTICAL EXERCISE			

NDT NEWSLETTER

ET *	19 APRIL 04 - 30 APRIL 04
PT/MT*	11 MAY 04 - 20 MAY 04
UT *	2 AUG 04 - 13 AUG 04
ET	27 SEP 04 - 8 OCT 04
RT	24 OCT 04 - 5 NOV 04

NDT CLASS SCHEDULE 2004

*** = full class**
Nondestructive Testing Center of Excellence, Redstone Arsenal, AL
Contact the NDT CoE for class availability.

NDT CoE Website

https://army-aviation-systems.redstone.army.mil/2agse02/ndt.htm

This is a secure web site. To request access, go to the following address:

http://www.amss.redstone.army.mil/agse/password_request.asp

NDT Program Mgr. – Ms. Sandra Ratley, DSN 788-8043, commercial 256-842-8043
sandra.ratley@peoavn.redstone.army.mil

NDT CoE Level III – Mr. Scott Huddleston, DSN 897-0211, commercial 256-313-0211
mailto:scott.huddleston@peoavn.redstone.army.mil

NDT CoE Level III – Ms. Rose Sanders, DSN 897-0201, commercial 256-313-0201
mailto:rose.sanders@peoavn.redstone.army.mil

NDT CoE Level III – Mr. Bob Seaman, DSN 897-0203, commercial 256-313-0203
mailto:robert.seaman@peoavn.redstone.army.mil

NDT CoE Level II – Mr. Ed Hart, DSN 788-6694, commercial 256-842-6694
mailto:edmund.hart@peoavn.redstone.army.mil